US Army Corps of Engineers.
Construction Engineering Research Laboratory

U.S. Army CERL
P.O. Box 9005
Champaign, IL 61826-9005

Public Affairs Office
Phone: (217)-352-6511
Fax: (217) 373-7222
http://www.cecer.army.mil

Fact Sheet

March 1999 (CN 7)

LAND CONSERVATION AND PROTECTION (LCP) PROGRAM

The Problem

Effective implementation of LCP practices is limited by several difficulties:

a. There is no basis for determining requirements and comparing benefits across installations and MACOM's to support LCP investments.
b. Advance erosion control technology is not being used appropriately to reduce costs.
c. Improper selection of plant species for revegetation results in failure for about one in four projects.
d. There is no framework upon which to infuse new technology from the rapid advancements in materials and methods being generated from the erosion control industry.
e. There is no formal procedure for developing LCP planning information to supplement the Integrated Natural Resources Management Plan (INRMP).

The Technology

Guidance and technology will be developed to support planning, design, execution and management of land rehabilitation and maintenance activities. Repetitive, high-intensity land use activities associated with military training present unique land rehabilitation and maintenance problems. Methods and materials in use by others may not be appropriate for use at military training areas. Appropriate erosion control technology will be identified, evaluated and documented through technical engineering guidance. A computerized capability will be developed to support the selection of appropriate plant species for revegetation; and more durable plant varieties will be developed. A land rehabilitation potential model will be developed to support land rehabilitation and maintenance investment and enhance the Army Training and Testing Area Carrying Capacity (ATTACC) procedure.

Guidance will be developed for regional vegetation establishment and management techniques. A model will be developed for geospatial terrain analysis. Design factors will be developed to support selection of appropriate, cost-effective technology for land rehabilitation and maintenance. Processes will be integrated within a standard Army system to provide procedures, analysis tools and advanced technical guidance within a standard methodology linked to other land management systems. The guidance and technology developed for this Capability Package will be used by installations within the MACOM's which support a field training mission, including FORSCOM, TRADOC, AMC, USAREUR, and USAPAC. Interim results from tests and evaluations conducted in support of applied research indicate a high probability for successful development of improved technology and demonstrate substantial cost savings from use of improved technology. The R&D being conducted under this Capability Package is a core component of R&D in support of sustainable military lands. No other agency or organization is involved in the development of such a broad and comprehensive management system for land rehabilitation and maintenance.

Six principal R&D activities are involved: 1) development and evaluation of advanced erosion control methods and materials; 2) development of more effective and durable plant species for revegetation of military lands; 3) development of design factors for technology selection; 4) development of a land rehabilitation potential model; 5) terrain modeling and soil erosion simulation; and 6) development of a methodology to bring all technology and guidance together within a logical framework which can be easily accessed by Army land managers. Innovative and cost-effective solutions to military unique land rehabilitation and maintenance requirements will be developed or adapted from new materials and methods emerging from the erosion control industry.

A plant species selection model (VegSpec) was completed in FY96. New plant cultivars will be derived through basic research involving field and laboratory experimentation. VegSpec will be enhanced to extend from species selection to revegetation management, and to incorporate new plant cultivars that are developed through basic research.

Benefits/Savings

Significant cost savings are expected through improved investment planning and more appropriate technology selection. For example, stabilization of firing points at Fort Stewart reduced maintenance requirements by 75%. The cost of innovative drop zone rehabilitation at Fort Bragg was about $3K per acre compared to a $22K per acre cost experienced with a conventional approach. The use of VegSpec is predicted to avoid much of the typical 10% to 35% failure rate for revegetation projects.

Status

Examples of recent test and evaluation efforts include 1) testing dust control products at Fort Campbell, Fort Sill, Fort McCoy and Fort Drum; 2) vetiver grass experiments at several installations, 3) firing point stabilization using rubber blocks at Fort Stewart; 4) drop zone erosion control at Fort Bragg; and 5) sediment monitoring at Fort Stewart.. Research on all LCP components will be completed by FY01.

Point Of Contact

CERL POCs are Mr. Robert E. Riggins, COMM 217-352-6511, e-mail r-riggins@cecer.army.mil and Mr. Michael Denight, COMM 217-352-6511, e-mail m-denight@cecer.army.mil. Both can be reached by FAX 217-373-7222 or CERL, ATTN:CECER-CN-C, P.O. Box 9005, Champaign, IL 61826-9005. Visit the CERL homepage at http://www.cecer.army.mil